

CLAIMS

1. An action group arbitration system, comprising:
 - a search block having a first type memory portion and a second type memory portion, wherein the search block is configured to provide a search result in response to a search key;
 - a first table having stored values and configured to receive the search result and to provide a selection signal in response to the search result having a first state and an associated stored value having an enable state; and
 - a second table configured to receive the selection signal and to provide an action indication.
2. The action group arbitration system of claim 1, wherein:
 - the first type memory portion includes static random access memory (SRAM).
3. The action group arbitration system of claim 1, wherein:
 - the second type memory portion includes ternary content addressable memory (TCAM).
4. The action group arbitration system of claim 1, wherein:
 - the first and second type memory portions include a plurality of entries.
5. The action group arbitration system of claim 4, wherein:
 - for each of the plurality of entries, an entry in the first table includes a plurality of the stored values.
6. The action group arbitration system of claim 5, wherein:
 - each of the stored values corresponds to an action group.
7. The action group arbitration system of claim 1, wherein:
 - the first state includes a hit or match indication.
8. The action group arbitration system of claim 1, wherein:
 - the second table includes an action table having a plurality of portions.
9. The action group arbitration system of claim 8, wherein:

each of the plurality of portions is configured to be accessed by a corresponding one of a plurality of the selection signals.

10. The action group arbitration system of claim 9, wherein:
each of the plurality of portions corresponds to an action group.
11. The action group arbitration system of claim 10, wherein:
the action group includes a user programmable register for enabling one or more categories of actions.
12. The action group arbitration system of claim 1, wherein:
the selection signal is generated in response to a precedence determination.
13. The action group arbitration system of claim 1, wherein:
the action indication includes an action to be performed on a packet.
14. A method of arbitrating actions, comprising the steps of:
performing a search operation;
accessing a stored action group number corresponding to each hit resulting from the search operation;
checking if group subfields in the stored action group number are enabled for any hits from the search operation;
allowing the hit for a group if the group subfield is enabled;
suppressing the hit for the group if the group subfield is not enabled;
determining a precedence to provide a search result for the group; and
selecting an action from an action table portion corresponding to the group.
15. The method of arbitrating actions of claim 14, wherein:
the performing the search operation includes searching a block having a first type memory portion and a second type memory portion.
16. The method of arbitrating actions of claim 15, wherein:
the first type memory portion includes static random access memory (SRAM).

17. The method of arbitrating actions of claim 15, wherein:
the second type memory portion includes ternary content addressable memory (TCAM).
18. The method of arbitrating actions of claim 14, wherein:
the accessing the stored action group number includes selecting an entry from an action group number table.
19. The method of arbitrating actions of claim 14, wherein:
the determining the precedence includes selecting a highest priority hit from among a remaining group of hits.
20. The method of arbitrating actions of claim 14, wherein:
the action table includes a portion corresponding to each of the groups.
21. The method of arbitrating actions of claim 20, wherein:
the selecting the action from the action table includes accessing the portion corresponding to the group.
22. A means for arbitrating actions, comprising:
a means for performing a search operation;
a means for accessing a stored action group number corresponding to each hit resulting from the search operation;
a means for checking if group subfields in the stored action group number are enabled for any hits from the search;
a means for allowing the hit for a group if the group subfield is enabled;
a means for suppressing the hit for the group if the group subfield is not enabled;
a means for determining a precedence to provide a search result for the group; and
a means for selecting an action from an action table portion corresponding to the group.